

[From the Proceedings of the Physiological Society, 23 October 1948.]
Journal Physiology, Vol. 108.

7. The action of curarizing substances on respiration in the cat.
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In cats anaesthetized with chloralose, the respiratory depression associated with a given paralysis of tibialis is much greater with D-tubocurarine (D.T.C.) than with bistrimethylammonium decane (C10, Paton & Zaimis, 1948). D.T.C. causes respiratory depression before significantly affecting tibialis twitch; but tibialis can be 95% paralysed with C10 before the respiration is affected. D.T.C. in the doses used does not alter the respiratory discharge down the phrenic nerve, unless asphyxia occurs, and does not cause bronchoconstriction. Its respiratory action is largely due to its strong depression of a tetanus (20 per sec.) in doses which have little effect on a twitch; with C10, however, the tetanus is well sustained. In addition, D.T.C. is more and C10 less active on red muscle (soleus, diaphragm) than on white muscle (tibialis). The sparing of respiration shown by C10 and related compounds is roughly in proportion to their anticholinesterase activity; but the selective respiratory depression of D.T.C. is not prevented by eserine or prostigmine.

REFERENCE

Paton, W. D. M. & Zaimis, E. J. (1948). *Nature, Lond.*, **161**, 718.

